



DEPARTMENT OF THE NAVY

NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
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09 OCT 1998

Environmental Protection Agency
Region I
Attn: Mr. Michael S. Barry
JFK Federal Building (HBT)
Boston, MA 02203

Dear Mr. Barry:

Subj: PROPOSED PLAN FOR SITE 9, NAVAL AIR STATION, BRUNSWICK, ME

Enclosed you will find our responses to comments on the Site 9 Draft Proposed Plan and a revised version of the Proposed Plan. You will note several items remain to be resolved which I'm looking forward to discussing at our meeting on October 20. The meeting will start at 1:00pm in Building 8 (PWC Conference Room). The sole purpose of this meeting is to discuss Site 9 comments on the Proposed Plan and the Long Term Monitoring Plan. Next week we will be sending you additional information which supports our position on the Long Term Monitoring Plan.

Please note this meeting will be held at NAS Brunswick, however, the Restoration Advisory Board Meeting scheduled for the next day will be held at the Parkwood Inn, Brunswick, Maine. A separate letter will be sent forwarding that agenda.

If you have any questions, feel free to call me at (610) 595-0567, x161.

Sincerely,

EMIL E. KLAWITTER, PE
Remedial Project Manager
By direction of the
Commanding Officer

Enclosures

- (1) Response to EPA Comments on Site 9 Proposed Plan
- (2) Response to MEDEP Comments on Site 9 Proposed Plan
- (3) Response to Lepage Environmental Services Comments on Proposed Plan
- (4) Site 9 Proposed Plan (working draft)

Copy to (w/encl):

Mr. T. Williams, NAS Brunswick

Mr. P. Nimmer, EA Engineering

Mr. J. Brandow, HLA

Copy to: (w/o encl)

Ms. C. Sait, MEDEP

Ms. C. Lepage, Lepage Environmental Services

**RESPONSE TO U.S. ENVIRONMENTAL PROTECTION AGENCY
COMMENTS ON SITE 9 DRAFT PROPOSED REMEDIAL ACTION PLAN**

1. Page 1, Introduction, Paragraph 1

- a. State that the Plan addresses contamination in soil (ash landfill) as well as the other media. This is confusing in part because the title of the interim ROD for Site 9 (OU6) was the "Groundwater Operable Unit at Site 9." However, the interim ROD went on to say that the final ROD would cover risks from "other sources" (Paragraph 3, Page 24). Other media have also been analyzed as part of the overall Site 9 effort as well (though risks appear to be minimal, if at all).

Response—This comment is noted. The list of possible contaminated media will be expanded to include soil.

- b. The second sentence is difficult to follow and should be simplified to read, "In accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)**, the law known as Superfund, the Proposed Plan presents the preferred remedial alternative for Site 9 and requests the Public's involvement in the selection of a final remedy."

Response—This comment is noted. The sentence will be changed to the above version.

2. Page 1, Introduction, Paragraph 2:

- a. The reference to EPA and MEDEP as "lead agencies" is confusing and should be revised to reflect the fact that the Navy is the lead agency at Brunswick NAS and EPA and MEDEP provide regulatory oversight of Navy environmental activities there. The reference to "Public Stakeholders" as a "lead agency" is inaccurate and should be deleted. Also, it is suggested that if the Plan is going to use the term "Public Stakeholders" elsewhere, the term be defined in the Glossary.

Response—This comment is noted. The revision of this statement will read, "The Navy will be the 'lead agency' at Brunswick NAS. The U.S. Environmental Protection Agency (EPA) Region 1 and the State of Maine Department of Environmental Protection (MEDEP) will provide regulatory oversight of Navy environmental Activities."

- b. With regard to the bulleted list of objectives: (1) revise the first objective to read, "Update information contained in the **Interim Record of Decision** issued for Site 9 in 1994 with the results of subsequent investigations"; (2) revise the second objective to read, "Explain the preferred remedial alternative the Navy has proposed for Site 9"; and (3) add a new third objective, "Describe the other remedial alternatives analyzed for Site 9."

Response—This comment is noted. Revisions will be made to the first two objectives as suggested above. Additionally, the new third objective, “Describe the other remedial alternatives analyzed for Site 9,” will be added.

- c. The last two bullets are good coverage of public informationXleave as is.

Response—This comment is noted. The last two bulleted statements will remain unchanged

- d. The cleanup proposal box is concise and draws the reader’s attention to the substance of the PRAP. This might be a good place to insert another bullet linking the interim ROD and negative source investigation mentioned in the general comments.

Response—The Navy agrees with this comment. As noted in the cover letter to EPA comments on the Draft Site 9 PRAP, the preferred remedy is essentially the same as the interim remedy and additional investigations required by the Interim ROD failed to identify any distinct source areas at the site, thus making the interim remedy an appropriate final remedy for Site 9. The Navy would like to resolve issues raised in MEDEP Comment No. 3 at the Technical meeting scheduled for 20 October 1998 prior to revising the PRAP as suggested.

3. *Page 2, The Remediation Proposal*

- a. It may be less confusing for the reader to call this section “The Proposed Remedial Action,” which reflects the title of the document.

Response—This comment is noted. The title of this section will be changed to “The Proposed Remedial Action.”

- b. The order of the second and third bullets should be switched. The section would be a more effective summary of the rationale underlying the Navy’s preferred alternative if the reader learns that vinyl chloride is the primary constituent of concern at Site 9 and is only present in the ground water before learning that there are no identified source areas for vinyl chloride at the site.

Response—This comment is noted. The second and third bullets will be switched.

- c. Use of the phrase “the Site 9 ground-water operable unit” in the third bullet may be somewhat confusing to the average reader. It is suggested that the Plan instead state that vinyl chloride is only present “in the ground water at Site 9.” Also, use the term “ground water” consistently throughout the Plan. Right now, it appears on various pages as “groundwater,” “ground-water,” and “ground water.”

Response—This comment is noted. The phrase “the Site 9 ground-water operable unit” will be changed to read “in the ground water at site 9.” Additionally, the term “ground water” will be consistently used throughout the document as follows: as an adjective, it will be hyphenated; as a noun, it will be two words.

- d. With regard to the fourth bullet: (1) indicate whether there has been long-term monitoring of the soil at Site 9 as well, (2) indicate that the sediment is stream sediment, (3) indicate the source of the leachate (suggest using “ground-water seep” instead of “leachate”), and (4) state that the VOCs whose concentrations are decreasing include vinyl chloride. In light of monitoring round 11 results, the phrase “...stabilized and decreasing at many sampled locations” is misleading, though true, and could beg more detailed questions. Suggest using language to the effect of “indicate stable concentrations or varying levels within a stable range, etc.”

Response—The Navy agrees with these comments. This paragraph will be changed to read, “Long-term monitoring of Site 9 ground water, stream sediment, surface water, and ground-water seep indicate volatile organic compound concentrations, including vinyl chloride, are reported at generally consistent concentrations (less than 20 parts per billion) or are decreasing.

- e. In the fifth bullet, delete “and application” after “for the use” as institutional controls are imposed or instituted, not applied.

Response—This comment is noted. The phrase “and application” will be deleted.

- f. In the paragraph discussing the requirements of the interim ROD, it would be useful here to explain the connection between the interim remedy and the preferred final remedial alternative in the same vein as in the general comment and Specific Comment 2.d above.

Response—To link the interim ROD and the preferred remedy as noted in this comment, the paragraph will be changed to read as follows:

“The requirements of defined in the Interim Site 9 Record of Decision, including use of monitored natural attenuation, have successfully reduced the risk of human exposure to site contaminants and negative impacts to the environment.”

- g. The public information and how to respond section is very helpful and establishes an obliging tone for the PRAP (no response required!).

4. *Page 3, Site History*

- a. This section adeptly relates the long history of Site 9 (no response required!).

Response—This comment is noted.

- b. Move the first paragraph on Page 3 to the end of the Site History section, where it will

make more sense chronologically, and so that the reader will learn what the areas of concern are at the site before learning what remedial actions are being taken to address them. Also, describe the "maintenance and corrective measures" that the Navy is currently undertaking in accordance with the interim ROD in more detail (one or two sentences).

Response—The first paragraph will be moved.

- c. Identify the authors and state the issuance dates for the Initial Assessment Study and Pollution Abatement Study.

Response—The authors and issue dates of these reports will be noted in the text of the report, including Pollution Abatement Study (E.C. Jordan 1985) and Initial Assessment Study (R.F. Weston 1983).

- d. Use one term consistently throughout the Plan to describe the inactive ash landfill area. Right now, it appears on various pages as the "inactive ash landfill/dump area," the "ash landfill," the "inactive ash landfill," the "former ash landfill/dump area," and the "ash disposal area." This may be confusing to some readers.

Response—This comment is noted. The area will be referred to as the "inactive ash landfill."

- e. The Plan should be more specific about what types of contaminants (e.g., VOCs or inorganics or both) are affecting what media in the area southeast of Building 201 (e.g., just ground water, or soil as well). The phrase "potential source of impact" is too vague and fails to provide this meaningful information. Suggest adding to this sentence a phrase to the effect of "due to a septic system and reported dumping of...."

Response—In order to clarify the impacted media and the reported past use of these areas, the sentence will be revised as follows:

"Historical information and aerial photographs indicate an area southeast of Building 201, which was reportedly used as a dumping area, has ground water impacted by vinyl chloride."

- f. At the end of this section, add a new paragraph that summarizes the Navy's overall remediation strategy, major progress to date for NASB, and addresses the role of the Site 9 final ROD in that strategy. This will help put Site 9 in perspective as not one of the "major" operable units at NASB. A good way to do this would be with some leading text then using a table; an example is enclosed. This paragraph should follow the paragraph (moved from the beginning of the section) about the Interim ROD and Long-Term Monitoring Plan already in place at Site 9.

Response—The Navy agrees that Site 9 is not a major operable unit of NAS Brunswick. Additional text will be added to the end of the referenced paragraph as follows:

“As part of the Navy’s overall remediation strategy at NAS Brunswick, the Final ROD for Site 9 will be prepared. To date, four Final RODs have been signed by EPA, and the Final ROD for Site 9 is scheduled to be completed during 1999.”

5. Pages 3-4, Summary of Investigations

The last paragraph on Page 3 and the first paragraph on Page 4 both appear to discuss the Phase I RI. If so, consolidate them; if not, explain the difference between the RI addressed in each paragraph. In either case, provide parenthetical citations to the authors and issuance dates of the RI and supplemental RI documents issued in 1990 and 1991. Also, the average reader may not understand what is meant by the phrase “distribution of soil impact” in the first paragraph on Page 4.

Response—The Navy agrees with these comments. These paragraphs will be consolidated, as recommended in the comment.

The phrase “distribution of soil impact” will be changed to read “...to determine if soil was impacted,....”

The citations of the Remedial Investigation (E.C. Jordan 1990) and the Supplemental Remedial Investigation (E.C. Jordan 1991) will be noted in the text.

6. Page 4, Summary of Investigations

- a. Identify the 1993 “additional study” by title, author, and date. Is this the Technical Memorandum prepared by ABB in 1994?

Response—The name, authors, and issue date technical memorandum will be noted in the text.

- b. Identify the primary VOCs present in Site 9 ground water “at concentrations exceeding Federal and State standards.”

Response—Vinyl chloride will be identified in the text.

- c. Revise the bulleted paragraph about PAHs at the inactive ash landfill/dump area to read “Polycyclic aromatic hydrocarbons (PAHs) were present in the ash in the inactive ash landfill/dump area but not in the ground water downgradient from the area.” Would it be more accurate to say PAHs were present in the soil in that area, not “the ash.”

Response—This comment is noted. The bulleted paragraph will be rewritten as suggested above. The word “soil” will be used in lieu of “the ash.”

- d. Identify the primary inorganics present in the ground water downgradient of the inactive ash landfill/dump area. Also, the average reader may not understand the term “analytes”; it is suggested that the term “contaminants” be used instead.

Response—The Navy agrees with these comments. The presence of elevated concentrations of aluminum, iron, and manganese will be noted in the text. The word “contaminants” will be substituted for “analytes.”

- e. In the last bullet, suggest using “ground-water seeps” instead of “leachate” and identify that the sediment is stream sediment in the unnamed streams.

Response—This comment is noted. The new bullet will read, “PAH were detected in ground-water seep and sediment from the unnamed stream.”

7. Page 4, Interim Record of Decision

- a. Use of the phrase “the ground-water operable unit at Site 9” in the first paragraph may be confusing to the average reader, even though this was the title of the Interim ROD. It is suggested that the Plan instead state that the interim ROD “addressed methods to control the potential hazard posed by the ground-water contamination at Site 9.” Also, substitute “selected interim remedial action” for “selected interim remediation.” Per Comment 1.a above and language in the Interim ROD, it is understood by EPA that the final ROD will include other media and impacts from sources other than ground water (more in risk section comments).

Response—The phrase “the ground-water operable unit at Site 9” will be changed to “the ground-water contamination at Site 9,” as suggested above. The phrase “selected interim remediation” will be replaced by the phrase “selected interim remedial action.”

- b. Also, state somewhere in this section that the remediation goals in the Interim ROD were based on MCLs and MEGs.

Response—This comment is noted. The revised sentence will read:

“The selected interim remedial action identified in the Record of Decision, specified ground-water remediation through natural attenuation to contamination levels below Federal MCL/State MEG, and established institutional controls, and long-term monitoring of site conditions.”

8. Page 4, Source Investigations

- a. Did these investigations provide any additional information, or confirm previous findings, on PAH in the ash/soil in the inactive ash landfill/dump area, inorganics in site ground water, or PAH and inorganics in site sediments or leachate? (This section only mentions the results of ground-water sampling for VOCs.)

Response—The primary focus of the Source Investigation was to identify a potential source of VOC in ground water. Some sampling for SVOC in soil was conducted although the results of these samples did not change the previous understanding of the distribution of PAH in soils. Therefore, the text of the PRAP will not be changed.

- b. Did these investigations confirm that the septic system was not a possible source area for VOCs? If so, that might be important to the reader.

Response—This comment is noted.

- c. With regard to the recommendation to continue the long-term monitoring program, state specifically which contaminants were declining in concentration with time, and in what media (i.e., was it all the primary COCs in all affected media or just VOCs in the site ground water?). Conversely, to make this bullet simpler, it could be indicated that an overall declining trend has been observed for VOCs/inorganics in media as appropriate.

Response—The Navy would agree that an overall declining trend has been observed for VOCs, and would like to discuss and resolve this issue at the Technical meeting scheduled for 20 October 1998.

9. **Page 4, Long-Term Monitoring Plan**

- a. Use of the phrase “the Site 9 ground-water operable unit Record of Decision” in the first paragraph may be confusing to the reader. It is suggested that the Plan instead use the phrase “the interim Record of Decision addressing the ground-water contamination at Site 9.”

Response—This comment is noted. The document will be changed to read “the interim Record of Decision addressing the ground-water contamination at site 9.”

- b. Identify the author and issuance date of the Long-Term Monitoring Plan.

Response—The text will be changed as follows “The Long-Term Monitoring Plan was developed in 1995 (ABB-ES 1995).”

- c. Clarify whether the 10 sampling events that have been accomplished to date addressed only ground water or other media as well. Eleven sampling events have now occurred. Vinyl chloride results of Monitoring Event 11 were mixed; recommend we discuss the wording for this section at the meeting. It appears that either general language or an explanation above the normal detail of a PRAP is required here.

Response—This section will be revised following the Technical meeting scheduled for 20 October 1998.

- d. On the last paragraph in this section, recommend adding a phrase to the effect of "...due to results of the 11 sampling rounds to date, and the fact that this area receives stormwater runoff from most of the Air Station built-up area..."

Response—The text noted above will be added.

10. Page 5, Risk Evaluations

- a. This section concisely summarizes the risks due to ground water, but should have more specifics as to the scenario (i.e., prolonged, ongoing human consumption) and include ecological risk as well. Human health and ecological risks associated with media other than the ground water should be summarized also. To be thorough, this section should state that the risk assessment indicated that none of the other contaminants present at the site pose an elevated risk to human health or the environment, in ground water or in any of the other affected media (assuming this is the case).

Response—This section will be revised following the Technical meeting on 20 October 1998.

- b. This section should include the following paragraph:

"Actual or threatened releases of hazardous substances from this site, if not addressed by the preferred alternative or one of the other active measures considered, may present a current or potential threat to public health, welfare, or the environment."

Response—This comment is noted. The above paragraph will be added to this section.

- c. The second paragraph discussion of ground-water use (or non-use) at Site 9 is a critical point. Suggest stating that a primary reason for ground water at Site 9 not being a drinking water source is due to: (1) NASB water supply from the municipal system, (2) no "plume" migration offsite or downgradient, and (3) low-yield overburden aquifer would not be a candidate for drinking water production in any case (if this is true).

Response—This comment is noted. The revised paragraph will read:

"It should be noted that ground water at Site 9 is not currently used as a source of drinking water as the Naval Air Station, Brunswick water supply comes from the municipal system. Also, there is no 'plume' migration offsite or downgradient of the site and there is no source of ground water that is likely to be accessible due to low permeability of the upper aquifer."

11. *Pages 5-6, Summary of Remedial Alternatives*

- a. This section of the Plan should accomplish the following tasks in the following order: (1) provide a narrative description of each alternative evaluated in light of the information collected in the additional source investigations conducted after the 1994 Interim ROD (make sure that the description of each alternative includes information about all of the following: engineering and treatment components, estimated present-worth cost, estimated implementation time (to discuss), and the major ARARs associated with the alternative); (2) identify the preferred alternative; (3) introduce the nine (not eight) evaluation criteria and discuss how they are utilized in the Superfund program; (4) provide the rationale for the preferred alternative by profiling it against the nine criteria and highlighting how it compares to the other alternatives (major advantages and disadvantages); and (5) discuss the Navy's belief that the preferred alternative would satisfy the CERCLA Section 121 findings (including a discussion of the preference for treatment and why it is acceptable that the preferred alternative does not include treatment).

Response—The Navy agrees with this comment. This section will be revised following the Technical meeting on 20 October 1998.

- b. A concise way to convey all this information would again be by tables. Table 1 does a great job of profiling the alternatives.

Response—The Navy agrees that a table similar to Table 1 can be used to summarize this information.

- c. A second table is needed to address the nine evaluation criteria much more specifically by weighing each alternative against each of the criteria (to meet [4]). An example from a recent Region I Federal Facility is enclosed. The nine CERCLA criteria also should be described briefly and are included in the example. These changes would sufficiently meet the statutorily required nine criteria analysis of the alternatives.

Response—The enclosed table will be used to develop a summary table for this section.

- d. Introducing this section of the Plan with a statement of the primary objective of the proposed remedial alternatives for Site 9, as the Plan currently does, is useful. It is suggested that language be included in this sentence to note that this primary objective is to prevent human exposure while reducing the concentrations of the constituents of concern to below the federal MCL/State MEG (or some similar wording that indicates how the Navy will measure "success" at the site).

Response—This comment is noted. The paragraph will be expanded to include "...while reducing the concentrations of the contaminants of concern to levels below the federal MCL/State MEG."

12. *Page 5, Table 1*

- a. What is "denotification?" Should this be "notification?" (This word also appears on Page 6 in the discussion of Alternative 2.)

Response—The term "denotification" will be changed to "notification."

- b. Land use restrictions are a form of institutional control. Also, the term "deed notice" has no legal meaning. It, therefore, is suggested that the Components section of the Monitored Natural Attenuation part of the table be rewritten to include a bullet stating that, "Institutional controls to prevent contact with soil and ground water and ingestion of ground water, including notification and land use restrictions (which will be placed in the Air Station Master Plan or deeds/leases upon any transfer of Site 9 property)." (The existing bullets about land use restrictions and institutional controls should be deleted.) EPA is concerned about exact IC execution language for the ROD and would like to discuss at the RAB. We will supply example from a recent ROD at an operating (non-BRAC) Navy Base for your consideration in the draft ROD. The geographical boundaries proposed by the Navy seem reasonable for soil, but should be broader for ground water.

Response—This comment is noted. The bullet containing information about land use restrictions and institutional controls will be deleted and the new bullet will be added as suggested. The boundaries of the site for ground water should be discussed at the Technical meeting scheduled for 20 October 1998.

- c. Language covering ecological risks, all media, and possibly expected remedy duration should be added. EPA would also like to discuss the assumptions under which the alternative costs were calculated.

Response—We would like to discuss these assumptions at the 20 October meeting.

13. *Page 6, Summary of Remedial Alternatives, Alternative 2*

- a. Why MEDEP approval required to excavate soil in the inactive ash landfill area, but not EPA approval?

Response—The sentence will be changed to note "regulatory approval" instead of "MEDEP approval."

- b. Suggest removing the 30-year limitation on 5-year reviews. Such a limitation runs directly counter to CERCLA and the NCP, which require 5-year reviews for as long as CERCLA hazardous substances that are left in place at a site remain there above levels that allow for unlimited use and unrestricted exposure. Conversely, monitoring (or portions, certain media, etc.) could end prior to the 30-year period.

Response—The Navy agrees with this comment. The text will be changed to remove the stipulation of a 30-year period.

- c. This would be the appropriate place to discuss a rough duration estimate of the remedy to reach the MCL/MEGs (also for Alternative 3). Remaining surface water, sediment, and ecological risks should be discussed here as well.

Response—This comment is noted. This section will be revised following the Technical meeting scheduled for 20 October 1998.

**RESPONSE TO STATE OF MAINE DEPARTMENT OF
ENVIRONMENTAL PROTECTION COMMENTS ON
DRAFT PROPOSED REMEDIAL ACTION PLAN FOR SITE 9**

GENERAL COMMENTS

1. A lot of wording either does not reflect the Department's understanding of the site or is too ambiguous. More factual information regarding this site must be added to provide a true depiction of the site.

Response—This comment is noted. The response to comments summarized below provide clarification on several of these issues.

2. The Department suggests replacing "constituent of concern" with "contaminant of concern" to avoid ambiguity to the lay reader.

Response—This comment is noted. The revised document will use the phrase "contaminant of concern" in lieu of "constituent of concern."

3. A review of the Department files regarding Site 9 indicates that the plume may be shifting to the west, and recent monitoring events show an unexplained changes in contaminant levels. In order to prove that the contamination is attenuating, some additional monitoring points will be necessary. Also the Department believes that there may be a source or sources upgradient (outside of Site 9) acting upon this site. If the plume continues to move and the plume does not attenuate as proposed, how does the Navy propose to handle this?

Response—Navy would like to discuss and resolve these issues at the upcoming Technical meeting on 20 October 1998.

SPECIFIC COMMENTS

4. *Introduction, Page 1, Paragraph 1*—"The Department of the Navy has released a Proposed Remedial Action Plan to address...."

This language is confusing to the reader and makes it sound like the Proposed Remedial Action Plan is a separate document. The Department suggests, "The Department of the Navy is releasing this Proposed Remedial Action Plan...."

Response—This comment is noted. The wording of the document will be changed to read, "The Department of the Navy is releasing this Proposed Remedial Action Plan...."

5. ***Introduction, Page 1, Paragraph 2***—“The Navy, in partnership with the State of Maine, Department of Environmental Protection (MEDEP),...and the Public Stakeholders are ‘lead agencies’ for base environmental activities.”

A short description of the Restoration Advisory Board, its mission, and who is represented in environmental issues would be more appropriate. Also, not all environmental activities on the base include the public stakeholders or this Restoration Advisory Board. This needs to be made clear.

Response—This sentence will be changed to the following, to address this comment and EPA Comment 2a:

“The Navy will be the ‘lead agency’ at Brunswick NAS. The U.S. Environmental Protection Agency (EPA) Region 1 and the State of Maine Department of Environmental Protection (MEDEP) will provide regulatory oversight of Navy environmental Activities.”

6. ***Introduction, Page 1, Entire Paragraph 3***—The monitoring of natural attenuation will not prevent public health impacts, it will only alert us that some other action is needed.

The Department suggests, “The Proposed Plan recommends institutional controls in combination with monitoring of natural attenuation to safeguard against unexpected contaminant migration that could impact public health.”

Response—This comment is noted. The document will be changed to read:

“The Proposed Plan recommends institutional controls in combination with monitoring of natural attenuation to safeguard against unexpected contaminant migration that could impact public health.”

7. ***The Remediation Proposal, Page 2, Third Bullet***—This statement, while true as far as we know, does not support the remedy. While vinyl chloride has not exceeded Ambient Water Quality Criteria in surface water at this site to date, it is one of the worst public health contaminants to have in ground water. Because vinyl chloride yet exceeds MEGs/MCLs in ground water and is not rapidly attenuating, Department will not support any language that downplays the significance of vinyl chloride.

Response— This sentence was not intended to downplay the significance of vinyl chloride, but was simply stating facts about the site. The text of the third bullet will be changed to read:

“The primary contaminant of concern, vinyl chloride, is present in the ground water of Site 9.”

8. ***The Remediation Proposal, Page 2, Fourth Bullet***—This bullet, while not technically false, places undue emphasis on monitoring results showing stabilized or decreasing concentrations, and ignores the importance of several significant increases in the past year. In that the source of vinyl chloride was not confirmed (or identified), the Navy has assumed that concentrations will not increase. The March 1998 lab results for monitoring well NASB-069 refutes this hypothesis. Furthermore, the Department views the continuation of status quo (stable concentrations of vinyl chloride above the MEG/MCL [i.e., NASB-069, NASB-072, and NASB-076]) as not indicating effective natural attenuation. This bullet should be rewritten without a bias.

Response—The reported concentrations of vinyl chloride are generally consistent with past reported concentrations at several locations (i.e., consistently less than 20 parts per billion), and several monitoring locations show a decreasing trend, which may be evidence of natural attenuation. To clarify this point, the 4th bullet will be rewritten as follows:

“Long-term monitoring of Site 9 ground water, sediment, surface water, and seeps indicate volatile organic compounds, including vinyl chloride, are reported at generally consistent concentrations (less than 20 parts per billion), and are decreasing at some sampling locations.

9. ***The Remediation Proposal, Page 2, Fifth Bullet***—“Movement of constituents of concern from Site 9 has not occurred.”

This statement seems too strong. The Department suggests, “No evidence of movement of contaminants of concern from Site 9 has been documented.” The Navy must keep in mind that there appears to have been an unexplained shift of the contaminant level to the west that will warrant monitoring.

Response—This comment is noted. The fifth bullet will be changed to read, “No evidence of movement of contaminants of concern from Site 9 has been documented.”

10. ***The Remediation Proposal, Page 2, Sixth Bullet***—“The nature and location of Site 9 allow for the use and application of institutional control to protect the public health and environment.”

Further information should be provided so that the public can understand what is meant by this statement.

Response—To clarify this point, the sixth bullet will be changed as follows:

Site 9 is located on an active military facility and no drinking water sources are located nearby. Institutional controls will be used to protect public health and environment.

11. ***The Remediation Proposal, Page 2, Column 1, Paragraph 2***—“The requirements defined in the interim Site 9 Record of Decision have successfully reduced the risk of human exposure to site contaminants.”

The status of the environment should also be included in this statement (see third paragraph of the Introduction).

Response— This comment is noted, the statement “and negative impacts to the environment” will be added.

12. ***Site History, Page 3, Paragraph 1***—“At Site 9, the Navy is performing long-term monitoring, maintenance, and corrective measures....”

Please provide a brief overview of the risk assessment results for the environment.

Response—A summary of the risk assessment is provided later in the Proposed Remedial Action Plan. Therefore, the text will not be changed.

13. ***Site History, Page 3, Column 1, Paragraph 1***—Briefly tell the nature of the corrective measures being performed by the Navy at Site 9.

Response—Corrective measures include use of institutional controls (i.e., preventing human contact with ground water by including the site in the base operational instruction). The text of the paragraph will be changed to read:

“At Site 9, the Navy is performing long-term monitoring, maintenance, and corrective measures to prevent human contact with ground water as part of the....”

14. ***Site History, Page 3, Unnamed Streams***—“Two retention ponds have been constructed...”

The figure shown is inaccurate as showing only one pond; whereas two dams (not shown) has created two ponds of distinctly different heads. The Navy needs to add the dams, and label both ponds. The Navy should also include information regarding the change in surface water elevations and when this change occurred.

Response—The figure will be revised to note the dam locations and the presence of the upper and lower retention ponds. The text of the paragraph will note these ponds were constructed in 1997.

15. ***Summary of Investigations, Page 4, Remedial Investigations, First Bullet***—“Volatile organics were present in ground water at concentrations exceeding Federal and State drinking water standards.”

Vinyl chloride is the primary culprit, and should be specifically named in this statement. Also, the presence of dichlorethene in ground water should be noted.

Response—This comment is noted. The text will be changed to specify vinyl chloride as

being present, although dichloroethene will not be noted, as this compound is not reported above MEG/MCL. The new bulleted statement will be changed to read:

“Volatile organics, including vinyl chloride, were present in ground water at concentrations exceeding....”

16. *Summary of Investigations, Page 4, Interim Record of Decision*—The term “Record of Decision” must always be preceded by interim, to avoid any possible confusion by the public.

Response—This comment is noted. The citation will be changed to Interim Record of Decision.

17. *Summary of Investigations, Page 4, Source Investigations*—“The additional source investigations were conducted of Site 9....”

The word “of” should be changed to “at.”

Response—This comment is noted. The word “of” will be changed to “at.”

18. *Summary of Investigations, Page 4, Source Investigations, Third Bullet*—“Ground-water sampling indicated that volatile organic compound concentrations had stabilized over time and may be attributed to the landfill area or the septic system located behind Building 201.”

Recent data indicate that concentrations thought to have stabilized in 1996, now are not stable in three monitoring wells. Also, MEDEP does not agree that volatile organic compounds in ground water can be attributed to the ash landfill or the septic system at Building 201. This phrase must be deleted or changed to provide an accurate view. MEDEP remains unconvinced concerning the Navy’s interpretation that vinyl chloride did not migrate from a source area upgradient of Site 9 boundaries.

Response—The Navy would like to discuss and resolve this issue at the upcoming Technical meeting scheduled for 20 October 1998.

19. *Summary of Investigations, Page 4, Long-Term Monitoring Plan, Paragraph 2*—“To date, a total of 10 sampling events....”

The total sampling rounds needs to be updated to reflect current status.

Response—This comment is noted. The sentence will be changed to reflect that 12 sampling events have taken place.

20. **Summary of Investigations, Page 4, Long-Term Monitoring Plan, Paragraph 2**—"These results indicate a general reduction in the vinyl chloride concentrations at all locations."

This is not true. Monitoring Event 11 showed that, at NASB-069, the concentration of vinyl chloride surpassed all previous concentrations measured in water from this well. The term "general reduction" appears very subjectively applied to Site 9 data, as there are notable exceptions. Accurate information must be provided to the public. Please correct.

Response—This is noted. The new sentence will read "a reduction in the vinyl chloride concentrations at several monitoring locations...."

21. **Risk Evaluations, Page 5, Last Sentence, 2nd Paragraph**—"Additionally, the vinyl chloride concentrations in the ground water have been decreasing."

In light of previous MEDEP comments, this sentence must be radically altered or deleted.

Response—Some variability can be expected during a naturally attenuating plume of chlorinated solvents. The Navy feels it is important to note that vinyl chloride concentrations have been dropping over time at several monitoring locations, and are generally stable at other monitoring locations. While it is true that some minor increases have occurred at three monitoring wells, long-term monitoring data indicate current concentrations are within the same order of magnitude as previous sampling events. The text of the paragraph will be changed as follows:

"Additionally, the vinyl chloride concentrations in the ground water have been decreasing at some locations, or have been consistently below 20 parts per billion."

22. **Summary of Remedial Alternatives, Page 5, List**—Where is the ninth Superfund-mandated criteria?

Response—The numbering of the nine criteria was incorrect, and Item No. 3 contained two criteria. The numbering of these criteria have been corrected.

23. **Summary of Remedial Alternatives, Page 6, Alternative 2, Paragraph 2**—"The Long-Term Monitoring Plan...to ensure contaminant concentrations do not increase...."

A monitoring plan cannot ensure that contaminant concentrations do not increase. It can safeguard against the consequences of an increase through early warning of trend changes. Please modify appropriately.

Response—This comment is noted. The revision will read:

“The Long-term Monitoring Plan, which is being revised in 1998, would be maintained to monitor for changes in contaminant concentrations and document the effectiveness of the natural attenuation process.”

24. Table 1, Monitored Natural Attenuation, Comment Box—How many years is the projected cost of \$852,000 based on?

Response—This cost is based on conducting bi-annual sampling for 20 years.

25. The Navy’s Proposed Remedy, Page 6—“This remedy will adequately control the risks posed at Site 9.”

Per the above theme, please rewrite. DEP suggests, “This alternative will provide basic information that can be used to control future risks should that be necessary.”

Response—This comment is noted. The statement will be changed to read as suggested.

“The Department is willing to agree with the Proposed Remedial Action Plan provided that our issues and comments are addressed and the Navy addresses the following issues in the Record of Decision:

- The limits of the plume must be determined.
- Adequate monitoring must be performed to detect changes in mobility and contaminant concentration. (This may include the installation of additional monitoring wells.)
- The type of institutional controls and the area on which the control are placed must clearly identified.
- Threshold trigger(s) to initiate a review of the remedial action plan, including looking for upgradient sources.
- A commitment to perform sampling at the ash landfill/dump if the buildings are ever demolished.

Response—This comment is noted. The Navy would like to discuss these comments at the upcoming Technical meeting scheduled for 20 October 1998.

**RESPONSE TO LEPAGE ENVIRONMENTAL SERVICES, INC.
COMMENTS ON DRAFT PROPOSED REMEDIAL ACTION PLAN FOR SITE 9**

1. **Page 1, Introduction**—The first sentence should be revised so the reader knows the Navy is referring to “this” *Proposed Remedial Action Plan*. It would also be helpful to readers not well-acquainted with the exact location of Site 9 at NAS Brunswick to have a more general location map as Figure 1.

Response—This comment is noted. The word “this” will be added. A more general location map is not planned, although the map will be revised to address other comments received from the MEDEP and EPA.

2. **Page 1, Introduction**—In the second paragraph, the Navy refers to its partnership with the regulatory agencies and the Public Stakeholders. The Navy should include a description of the Restoration Advisory (RAB) and the RAB’s role in the activities conducted at the site to date, including the development of this PRAP.

Response— This comment is noted. The text will be revised to clarify. Please see response to comments for MEDEP Comment No. 5.

3. **Page 1, Introduction**—In the final paragraph of this section, the Navy states that institutional controls, in combination with monitored natural attenuation, will prevent contaminants from impacting public health and the environment. However, these actions are no absolute guarantee that adverse impacts might not occur. Rather, they reduce the potential for adverse impacts to occur. The wording of the last paragraph should be revised.

Response—This comment is noted. The text will be revised to clarify. Please see response to comments for MEDEP Comment No. 6.

4. **Page 2, The Remediation Proposal**—The Navy uses the term “operable unit” in the third bullet. The term is likely to be confusing to readers who have not been involved in past investigations at NAS Brunswick. Perhaps the term should be dropped.

Response—This comment is noted. The text will be revised to clarify. Please see response to EPA Comment No. 3c.

5. **Page 2, The Remediation Proposal**—While the statement in the fourth bullet that volatile organic compounds have decreased at a number of sampling locations is true, concentrations of vinyl chloride have increased at others. In addition, levels of vinyl chloride continue to exceed regulatory levels. The text should be revised to reflect a more complete picture.

Response—This issue will be discussed at the Technical meeting scheduled for 20 October 1998.

6. ***Page 2, The Remediation Proposal***—The fifth bullet indicates that we know with certainty that site-related contaminants have not moved from Site 9. The statement should be revised to indicate that, based on available data, it does not appear that contaminants have moved offsite. In addition, the bulleted text should reflect the concern with vinyl chloride exceeding regulatory levels in ground water.

Response—This comment is noted. Wells located across the drainage (i.e., offsite) have been included in the long-term monitoring program, and there has been no documented movement of vinyl chloride offsite. Please see response to MEDEP Comment No. 9.

7. ***Page 2, The Remediation Proposal***—The requirements defined in the interim Record of Decision that have successfully reduced the risk of human exposure to site contamination should be identified.

Response—This comment is noted. Please see response to MEDEP Comment No. 10.

8. ***Page 2, The Remediation Proposal***—The requirements defined in the interim Record of Decision that have successfully reduced the risk of human exposure to site contamination should be identified.

Response—This comment is noted. Please see response to MEDEP Comment No. 10.

9. ***Page 2, The Remediation Proposal***—The dates presented in the “How to Obtain More Information” box and elsewhere in the text should be in the more conventional format of month followed by day.

Response—This comment is noted.

10. ***Page 2, The Remediation Proposal***—The paragraph at the top of the second column does not clearly inform the reader where documents in the Administrative Record can be reviewed. It appears that Curtis Memorial Library only has an index to the Administrative Record. Please clarify.

Response—The Curtis Memorial Library is the correct location of the Administrative Record.

11. ***Page 2, The Remediation Proposal***—In the final paragraph of the section, the text states that the “final choice of remedy will be...concurred by the MEDEP.” This should be revised to read more smoothly.

Response—For clarity, the text will be changed to read:

“... Navy and EPA with concurrence by MEDEP.”

12. **Page 3, Site History**—The maintenance and corrective measures being performed as part of the long-term remedial action should be described briefly. In addition, if references are cited in the text, a reference list should be included in the PRAP. This reference list and the text citations should also include other sources of information that would be helpful to the reader, such as the April 1997 *Final Source Investigation Report* and the May 1995 *Final Technical Memorandum for Site 9*.

Response—This comment is noted. The corrective measures will be incorporated into the PRAP, as noted in response to MEDEP Comment No. 10. Maintenance relates to the upkeep of the monitoring network, and is considered of unnecessary detail to include in the PRAP. The Source Investigation report and Technical memorandum results are currently summarized, as there were no major changes in the conclusions of these documents between the draft and final versions.

13. **Page 3, Site History**—Additional information regarding what was reportedly dumped in the area southeast of Building 201 should be provided.

Response—Previous reports do not specifically identify the materials which were reportedly dumped behind building 201, therefore, no changes will be made to the PRAP.

14. **Page 3, Site History**—The description of the unnamed stream and the two retention ponds in the text and the location of the pond shown on Figure 1 are confusing. Figure 1 should be corrected to show the location of the dam adjacent to Site 9 and the text should indicate that the location of the southern stream is now part of the upper pond. Additional information should be provided regarding when the ponds were constructed and how they affect ground and surface water conditions at the site.

Response—The figure will be revised. Please see response to MEDEP Comment No. 14.

15. **Page 4, Summary of Investigations**—The first line of text in the right column should end with “at” rather than “of.”

Response—This comment is noted and the correction will be made.

16. **Page 4, Summary of Investigations**—The third bullet in the right column is not correct. Concentrations of volatile organic compounds (VOCs) have not stabilized. Attributing the VOCs to the landfill area or the septic system behind Building 201 indicates that sources have been identified with certainty. Existing information has not demonstrated that those two areas are indeed the only two source areas for VOCs. In fact, the source(s) of VOC detections at Site 9 may have yet to be identified. The text must be revised.

Response—The Navy would like to discuss and resolve this issue at the 20 October Technical meeting.

17. **Page 4, Summary of Investigations**—The next-to-last paragraph in the right column must also be revised. The correct number of sampling events must be given, perhaps with reference to a particular date, rather than saying, “To date...” The second sentence is not accurate. Concentrations of vinyl chloride have not decreased at all locations. Given the concerns with detections and potential exposure to even very low concentrations of vinyl chloride, any detection of the compound should be considered significant.

Response—The correct number of monitoring events will be noted. The issue of changing vinyl chloride concentrations will be addressed at the 20 October 1998 Technical meeting.

18. **Page 5, Risk Evaluation**—The term “baseline risk assessment” should be added to the glossary. The text should also indicate when the risk assessment was performed. A reference citation would also be helpful to the reader.

Response—This comment is noted.

19. **Page 5, Risk Evaluation**—The last sentence in the section is not accurate and must be revised to state that concentrations of vinyl chloride have increased at several locations.

Response—The issue of changing vinyl chloride concentrations will be addressed at the 20 October 1998 Technical meeting.

20. **Page 5, Summary of Remedial Alternatives**—The 1994 Interim ROD for Site 9 lists 9 criteria for selecting the remedy for the site, while only 8 are listed in the right column on Page 5. It appears that No. 3 actually contains 2 of the primary balancing criteria. The list should be revised so that No. 3 reads Long-term effectiveness and permanence, and the fourth reads “Reduction in toxicity, mobility, or volume through treatment.” The subsequent items should be renumbered appropriately.

Response—This comment is noted. Please see response to EPA Comment No. 11a.

21. **Page 5, Table 1**—It is not clear what period of time the costs for the monitored natural attenuation alternative were calculated to cover. What is the “life” of this alternative? Also, what does “denotification,” listed as one of the components for the alternative, mean?

Response—Please see response to MEDEP Comment No. 24 and EPA Comment No. 12a.

22. **Page 6, Summary of Remedial Alternatives**—Long-term monitoring cannot ensure that concentrations will not increase over time. It can document changes in concentrations at monitoring locations over time, but cannot prevent an increase. The text in the second paragraph under Alternative 2 should be revised accordingly.

Response—Please see response to MEDEP Comment No. 23.

23. ***Page 6, The Navy's Proposed Remedy***—The remedy selected should provide a warning should risk thresholds be exceeded, rather than control the risks posted at Site 9. Please clarify.

Response—Please see response to MEDEP Comment No. 25.

24. ***General Comment***—There is still some issue related to surface water quality monitoring that remain to be solved. Upcoming technical meetings and RAB meetings should provide a forum for continued discussions regarding revisions to the long-term monitoring plan. In addition, concern remains that the contaminant source area (or areas) has not been clearly identified.

Response—This comment is noted. These issues will be discussed at the Technical meeting scheduled for 20 October 1998.

Please note clipart will be included on DRAFT FINAL

**DEPARTMENT OF THE NAVY
INSTALLATION RESTORATION PROGRAM
NAVAL AIR STATION, BRUNSWICK, MAINE**

**PROPOSED REMEDIAL ACTION PLAN
FOR SITE 9
OCTOBER 1998**

Introduction

The Department of the Navy ~~has released~~ *is releasing this* Proposed Remedial Action¹ Plan (Proposed Plan) to address the **ground-water**, surface water, *soil*, and sediment contamination located at the Naval Air Station (NAS) Brunswick, Site 9 (Neptune Drive Disposal Site), in the City of Brunswick, Maine (Figure 1). ~~The Proposed Plan presents the preferred remedial alternative necessary to achieve compliance with the requirements of Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the law known as Superfund, to ensure the public health and environment.~~ *In accordance with Section 117(a) of the Comprehensive, Environmental Response, Compensation, and Liability Act (CERCLA), the law known as Superfund, the Proposed Plan presents the preferred remedial alternative for Site 9 and requests the Public's involvement in the selection of a final remedy.*

This site was investigated as part of the base's Installation Restoration Program ~~which The Installation Restoration Program~~ is being conducted to identify and cleanup sites created by past operations that do not meet today's environmental standards. ~~The Navy, in partnership with the State of Maine, Department of Environmental Protection (MEDEP), the U.S. Environmental Protection Agency (EPA) Region I, and the Public Stakeholders, are the "lead agencies" for base environmental activities.~~ *The Navy will be the "lead agency" at NAS Brunswick. The U.S. Environmental Protection Agency (EPA) Region I and the State of Maine Department of Environmental Protection (MEDEP) will provide regulatory oversight of Navy environmental activities.* This Proposed Plan is intended to accomplish the following objectives:

- ~~Update information contained in the Interim Record of Decision issued by the Navy for the Site 9 in 1994 based on later investigations. Update information contained in the interim Record of Decision issued for Site 9 in 1994 with the results of subsequent investigations.~~
- Explain the preferred alternative the Navy has ~~selected~~ *proposed* for Site 9.
- Describe the other remedial alternatives assessed for Site 9
- Define how "You," the Public, can participate in the process.
- Indicate how you can obtain additional information.

The Proposed Plan recommends institutional controls in combination with monitored **natural attenuation** ~~to prevent Site 9 contaminants from impacting~~ *to safeguard against unexpected contaminant migration from Site 9 that could impact Public health and environment.*

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THE CLEANUP PROPOSAL:

After careful study of Site 9, the Navy proposes the following plan:

- Continue monitored Natural Attenuation
- Establish Institutional Controls such as Land Use Restrictions for soil and ground water
- Continue Long-Term Monitoring with 5-year reviews

1. The text shown in **boldface** is defined in the Glossary.

The Remediation Proposal The Proposed Remedial Action

The Navy's recommendation for institutional controls and monitored **natural attenuation** is based upon the following:

- A remedial investigation was completed to define the key site characteristics and constituents of concern.
- The primary constituent of concern, vinyl chloride, is ~~only present in the Site 9 ground-water operable unit~~ ground water at Site 9.
- Extensive investigations have not identified a source of vinyl chloride at the site.
- Long-term monitoring of Site 9 ground water, sediment, surface water, and ~~leachate~~ ground-water seep indicates volatile organic compound concentrations, including vinyl chloride, ~~have stabilized and decreasing at many sampled locations~~ are reported at generally consistent concentrations (less than 20 parts per billion) or are decreasing at some sampling locations.
- Movement of constituents of concern from Site 9 has not occurred.
- The nature and location of Site 9, which is an active military facility and has no drinking water sources located nearby, allow for the use and application of institutional controls to protect the Public health and environment.
- ~~Site 9 is located on an active military facility and no drinking water sources are located nearby. Institutional controls will be used to protect public health and environment.~~

The requirements defined in the interim Site 9 **Record of Decision**, including use of monitored natural attenuation, have successfully reduced the risk of human exposure to site contaminants and negative impacts to the environment.

The official, 30-day Public comment period will be from ~~to~~, 1998, date to be determined. Upon timely request, the Navy will extend the comment period by a minimum of 30 additional days. You do not have to

be a technical expert to comment—the Navy wants to hear your comments before making a final decision.

During the comment period, the Public is invited to review the documents and correspondence which support the Proposed Plan. These documents have been compiled into an **Administrative Record**. An **Administrative Record Index** listing the relevant documents is available for your review at the *Curtis Memorial Library* located in Brunswick.

Public comments are an important part of the cleanup process for Site 9. Based upon new information or Public comments, the preferred alternative presented in this Proposed Plan can be modified or a different alternative can be selected. Therefore, the Navy is encouraging the Public to provide comments on this Proposed Plan.

There are two ways to offer your formal comments on the Proposed Plan:

1. Offer oral comments during the Public Hearing to be held after the Public Informational Meeting on date to be determined ~~Wednesday, 2 September 1998~~, at 7:00 p.m. ~~at~~ ~~_____~~. Comments made at the hearing will be transcribed, and a copy of the transcript will be added to the site **Record of Decision** and **Administrative Record**.
2. Send written comments by the end of the Public comment period (postmarked no later than date to be determined 1998) to the following address:

Mr. Emil Klawitter
Remedial Project Manager (Code 1823 EK)
Northern Division, Naval Facilities
Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090
Fax: (610) 595-0555

The final choice of a remedy will be issued in a **Record of Decision** document, which is expected to be signed by the Navy and EPA and ~~concurred~~ with concurrence by MEDEP. The **Record of Decision** will contain a Responsiveness Summary in which the Navy's responses to comments received during the Public comment period will be presented.

Site History

NAS Brunswick, located in Brunswick, Maine, is an active based owned and operated by the Federal government through the Department of the Navy. In 1987, NAS Brunswick was placed on the **National Priorities List** by EPA. NAS Brunswick is located south

How to Obtain More Information

The Navy will hold a Public Informational Meeting on ~~Wednesday, 2 September 1998~~, date to be determined at 7:00 p.m. ~~at the _____ at _____~~ in order to describe the proposed alternative as well as the other alternatives which were evaluated. The Public is encouraged to attend this meeting in order to hear the presentations and to ask questions.

of the Androscoggin River between Brunswick and Bath, Maine, south of Route 1 and between Routes 24 and 123. The primary mission of NAS Brunswick is flight operations related to anti-submarine warfare.

Site 9 was identified in the Initial Assessment Study (Roy F. Weston 1983) and was later included in the Pollution Abatement Confirmation Study (E.C. Jordan 1985). Based on information gathered during those tasks, Site 9 was defined as three areas of potential concern:

1. The former location of an incinerator in the northeast corner of Building 220, and an inactive ash landfill/dump area in the current location of Buildings 218 and 219 (military barracks north of Neptune Drive)
2. A reported disposal area behind Building 201 (the dining facility south of Neptune Drive)
3. The two streams bordering the recreational area behind Building 201.

These areas are described in the following paragraphs, and the layout of Site 9 is shown on Figure 1.

Former Incinerator and Inactive Ash Landfill

The inactive ash landfill is located under barracks buildings north of Neptune Drive. The incinerator location has been identified from maps of the area. There is no precise information concerning the types of wastes handled or disposed in these areas. The incinerator was apparently operated during a period between 1943 until 1946. Wastes disposed at Site 9, presumably at the location of the inactive ash landfill, reportedly included solvents that were burned on the ground, paint sludges, and possible wastes from the Metal Shop. Current land use at the former incinerator and inactive ash landfill is for military residences.

Building 201

Historical information and aerial photographs indicate an area southeast of Building 201 as a potential source of impact. This area, was reportedly once used as a dumping area, has more recently been used as a picnic area.

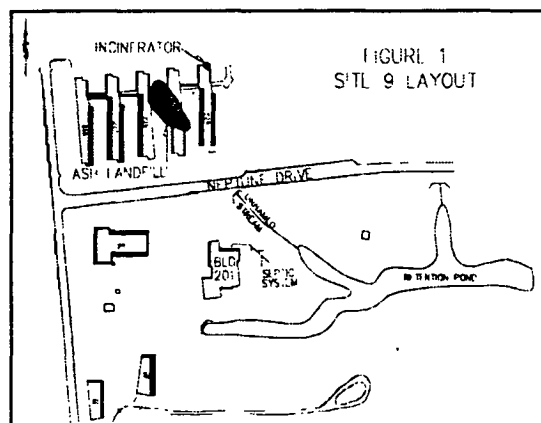
Unnamed Streams

Two unnamed streams border the area around Building 201; one to the north and one to the south. These streams drain runoff from the central portion of the base, including the runways, parking lots, and paved roads. Two retention ponds have been constructed during 1997 which have flooded the majority of these streams. Ground-water seeps have been observed flowing into the northern unnamed stream.

At Site 9, the Navy is performing long-term monitoring, maintenance, and corrective measures to prevent human contact with ground water as part of the long-term remedial action required by the Interim Ground-Water Record of Decision, dated September 1994 (ABB-ES 1994). A Long-Term Monitoring Program was established pursuant to the Interim Ground-Water Record of Decision (ABB-ES 1995).

Summary of Investigations

~~A remedial investigation was conducted at Site 9 to characterize the site geology, hydrology, and inorganic and organic constituents of concern in the soil, stream sediments, ground water, and surface water. Ground-water flow at the site is to the south and southeast, discharging to the two streams.~~



Remedial Investigations

In 1988 and 1990, The Navy completed a **Phase I Remedial Investigation** (E.C. Jordan 1990) and **Supplemental Remedial Investigation** (E.C. Jordan 1991) **Feasibility Study** at Site 9. ~~The~~ These remedial investigations ~~was~~ were conducted to ~~assess the distribution of soil impact, determine if soil was impacted,~~ monitor **ground water** downgradient of Site 9, assess the significance of chemicals detected in the **ground water**, and determine the potential impact of the site on surface water and sediment quality. ~~These investigations were also used to characterize the site geology, hydrology, and inorganic and organic constituents of concern in the soil, stream sediments, ground water, and surface water.~~

In 1993, an additional study was conducted. A **Technical Memorandum** was issued (ABB-ES 1994) to assess the likelihood that a septic system located east of Building 201 could be the primary source of vinyl chloride in **ground water**.

These activities determined the following:

- Volatile organics, including vinyl chloride, were present in **ground water** at concentrations exceeding Federal and State drinking water standards.
- The septic system of Building 201 was determined not to be a current source of **ground-water** impact.
- The ~~former~~ inactive ash landfill/~~dump area~~ was identified and characterized. **Polycyclic aromatic hydrocarbons (PAH)** were present in the ash but not present in **ground water** downgradient from this location.
- Elevated concentrations of inorganics, including aluminum, iron, and manganese, were present in **ground water** downgradient of the ~~inactive ash landfill disposal area~~. These ~~analytes~~ contaminants may be due to disposal activities from this area.
- Inorganics and **PAH** were detected in ~~leachate~~ **ground-water seep** and sediment from the unnamed streams. The presence of these ~~materials~~ contaminants is likely attributed to runoff from non-point sources such as roadways and parking lots.

Interim Record of Decision

An interim **Record of Decision** developed by the Navy and approved by MEDEP and EPA on 13 September 1994, to address methods to control the potential hazard posed by the **ground-water operable unit** contamination at Site 9. The selected interim ~~remediation~~ remedial action identified in the **Record of**

Decision, specified **ground-water** remediation through **natural attenuation** to concentrations below **Federal MCL/State MEGs**, and established institutional controls, and, conduct long-term monitoring of site conditions.

The **Record of Decision** specified conducting additional source investigations, and the development of a Long-Term Monitoring Plan.

Source Investigation

The additional source investigations were conducted at Site 9 in 1995/1996, and contained the following conclusions:

- No specific source of vinyl chloride in **ground water** was identified
- A fuel spill may have once occurred although concentrations were below cleanup goals for soil.
- **Ground-water** sampling indicated that **volatile organic compound** concentrations had stabilized over time and may be attributed to the landfill area or the septic system located behind Building 201.
- Continuation of the long-term monitoring program was recommended to clearly show that contaminant concentrations are declining with time, and to determine the long-term effects of **natural attenuation**.

Long-Term Monitoring Plan

A Long-Term Monitoring Plan was developed in 1995 (ABB-ES 1995) as required by ~~the Site 9 ground-water operable unit Record of Decision~~ the **interim Record of Decision** addressing the **ground-water** contamination at Site 9. The purpose of the Long-Term Monitoring Plan was to:

- Characterize the **ground-water** and surface water quality onsite and downgradient of Site 9.
- Identify impact associated with past disposal activities.
- Better establish the presence/absence and concentrations of contaminants which were sporadically identified during previous sampling events.

~~To date~~, As of July 1998, a total of 11 12 sampling events have been accomplished at Site 9 with the primary emphasis placed on **ground-water** sampling for vinyl chloride. These results indicate a general reduction ~~in~~ or stabilization of the vinyl chloride concentrations at the ~~majority of several monitoring locations~~. With the exception of manganese, inorganic sample results are at or below site background. The elevated manganese concentrations are believed to be attributable to natural site conditions.

Reported PAH compounds in sediment and surface water are believed attributable to the runoff from non-point base sources such as vehicles, roadways, and aircraft due to the results of the 12 sampling events. The Site 9 area receives stormwater runoff from most of the Air Station buildup area.

Risk Evaluations

A baseline risk assessment was completed for Site 9 to estimate potential risks to human health and the environment posed by potential exposure to **ground-water**, surface water, sediment, leachate, and soil contaminants. The risk assessment indicated an elevated cancer risk is present based on ingestion or contact with **ground water**, due to the presence of vinyl chloride. An elevated hazard index for **ground water** was noted due to the presence of manganese.

It should be noted that **ground water** at Site 9 is not currently used as a source of drinking water as the NAS Brunswick water supply comes from the municipal system. Additionally, there is no plume migration offsite or downgradient of the site, and there is no source of **ground water** that is ~~readily accessible~~ likely to be accessible due to low permeability of the upper aquifer. Results of the Long-Term Monitoring Plan have failed to identify the presence of vinyl chloride in the surface water of the north and south branches of the unnamed stream. Additionally, the vinyl chloride concentrations in **ground water** have been decreasing at some locations, or have been consistently below 20 parts per billion since long-term monitoring was initiated in 1995.

Actual or threatened releases of hazardous substances for this site, if not addressed by the preferred alternative or one of the other active measures considered, may present a current or potential threat to Public health, welfare, or the environment.

Summary of Remedial Alternatives

The primary objective of the proposed remedies for Site 9 are to prevent human exposure to the contaminated **ground water** while reducing constituent of concern concentrations at the site.

The following is a summary of the nine Superfund-mandated criteria used to balance the pros and cons of the remedial alternatives. These alternatives have been evaluated using the first seven criteria. Once comments from the Public are received, the alternatives will be evaluated using the last two criteria to select the remedy for Site 9.

1. Overall protection of human health and the environment
2. Compliance with **Applicable or Relevant and Appropriate Requirements**
3. Long-term effectiveness and permanence
4. Reduction in toxicity, mobility, or volume through treatment
5. Short-term effectiveness
6. Implementability
7. Cost
8. Community acceptance
9. Support agency acceptance.

Table 1 provides an overall comparison of the proposed remedial alternatives. To meet this objective, the Navy has developed the following remedial alternatives.

TABLE 1 COMPARISON OF THE PROPOSED REMEDIAL ALTERNATIVES

Remedial Alternatives	Components	Comment
No Action	■ None	■ Provides limited protection of human health and the environment ■ Does not comply with regulatory requirements Cost: \$0
Monitored Natural Attenuation	■ Natural attenuation of vinyl chloride in ground water ■ Institutional controls to prevent contact with soil and ground water and ingestion of ground water, including notification and land use restrictions (which will be placed in the Air Station Master Plan or deeds/leased upon transfer of Site 9 property).	■ Protects human health ■ Will monitor potential risks to the environment to determine compliance with regulatory requirements

Active Remediation and Monitoring	<ul style="list-style-type: none"> ■ Continued long-term monitoring of ground water ■ 5-year site reviews ■ Pump impacted ground water ■ Treat extracted ground water ■ Excavate <i>inactive</i> ash landfill ■ Long-term monitoring and institutional controls as listed in Alternative 2 	Cost: \$852,000 <ul style="list-style-type: none"> ■ Protects human health ■ Decreases time for site cleanup Cost: \$1,584,200
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Alternative 1—No Action

Under the No Action alternative, no cleanup actions or institutional controls would be implemented. The No Action alternative does not meet the remedial goals for Site 9 because it would take no action to prevent contact with affected **ground water**; however, consideration of the No Action alternative is required by the National Contingency Plan in order to serve as a baseline comparison for other remedial alternatives.

Alternative 2—Monitored Natural Attenuation and Institutional Controls

The **Monitored Natural Attenuation** alternative includes the use of natural biological and mechanical systems to degrade chemical contaminants. Institutional controls include denotification to prevent excavation and contact with impacted soil in the *inactive* ash landfill without ~~MEDEP~~ regulatory approval, and land use restrictions with a deed notice to prevent human contact with **ground water**. A notice to prevent contact with soil and **ground water** will be added to the facility's Master Plan; and if the property is transferred from Navy control, deed restrictions would be employed. Other aspects of this alternative include continuance of the current Long-Term Monitoring Plan and 5-year reviews by the Navy, EPA, and MEDEP. ~~for a 30-year period.~~ The land use restrictions address the existing risks by preventing human use and exposure to the affected soil and **ground water**.

Restrictions would be applied to the entire Site 9 area east of Orion Street to Avenue "F," extending east to the picnic pond area, and south to Building 52. The Long-Term Monitoring Plan, which is being revised in 1998, would be maintained in place to ~~ensure contaminant concentrations do not increase~~ *safeguard against the consequences of an increase through early warning of trend changes*, and to document the effectiveness of the **monitored natural attenuation** process.

Alternative 3—Active Remediation and Monitoring

Under the active remediation and monitoring scenario, a pump and treat remedy would be used to pump impacted **ground water** from two extraction wells to a treatment plant. The treatment process would include pre-treatment of the water for metal removal and enhanced chemical oxidation of the organic compounds in **ground water** using ultraviolet light. Treated water would be

discharged to the sewer or reinjected into the **aquifer**. In addition, the *inactive* ash landfill would be excavated and replaced. Long-term monitoring and institutional controls, as listed in Alternative 2, would be implemented. The time to achieve cleanup concentrations is estimated to be 3 years.

The Navy's Proposed Remedy

The Navy recommends that the Institutional Controls and **monitored Natural Attenuation** (Alternative 2) be implemented. ~~This remedy will adequately control the risks posed at Site 9.~~ *This alternative will provide basic information that can be used to control future risks should that be necessary.* This remedy includes land use restrictions to prevent human exposure to constituents of concern in **ground water**, continued long-term monitoring to demonstrate contaminant concentration reduction.

Glossary

Administrative Record—An official compilation of site-related documents, data, reports, and other information that is considered important to the status of a decisions made relative to a Superfund site. The Public has access to this material.

Applicable or Relevant and Appropriate Requirements—The Federal and State requirements that a selected remedy must attain. These requirements may vary among sites and remedial alternatives.

Aquifer—A zone below the surface of the earth capable of producing water, as from a well.

Comprehensive, Environmental Response, Compensation, and Liability Act (CERCLA)—A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Act created a trust fund, known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous substance facilities.

Ground Water—Water found beneath the earth's surface in geologic formations that are fully saturated. When it occurs in sufficient quantity, ground water may be used as a water supply.

National Priorities List—EPA's list of the nation's top priority hazardous substance facilities that may be eligible to receive Federal money for response under CERCLA.

Natural Attenuation—The natural decay of volatile organic compounds by physical processes, including diffusion, dispersion, and degradation and biologic
Polycyclic Aromatic Hydrocarbon (PAH)—High molecular weight, relatively immobile and moderately toxic solid organic chemicals. Examples include naphthalene and phenanthrene.

Record of Decision—A legal document that describes the remedy selected for a Superfund facility, why the **remedial actions** were chosen and others not, how much they cost, and how the Public responded.

Remedial Action—Actual implementation, following design, of the selected remedy to prevent or minimize the release of hazardous substances.

processes such as biotransformation.

Operable Unit—A discrete portion of a site or a discrete action representing an incremental step in the investigation and remediation of hazardous substances at a facility.

Remedial Investigation/Feasibility Study—A 2-part study of a hazardous substance facility that supports the selection of a remedy for a site. The first part, the remedial investigation, identifies the nature and extent of contamination at the facility. The second part, the feasibility study, identifies and evaluates alternatives for addressing the contamination. A focused feasibility study is a streamlined version of the feasibility study and evaluates a limited number of alternatives for a specific problem at the facility.

Volatile Organic Compounds—Organic liquids (e.g., vinyl chloride and trichloroethene) that readily evaporate under atmospheric conditions.

COMMENT SHEET - Proposed Remedial Action Plan for Site 9

You may use this form to send in your written comments on this Proposed Plan. Please send your comments to the address shown below **postmarked no later than** _____ **1998.**

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